Allergy Abstracts

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Asthma and Hay Fever

Status Asthmaticus. Piness, G.: J. A. M. A. **142**: 785, 1950.

Status asthmaticus may be defined as a state of intense dyspena which lasts for a few days to a week or more. It is caused by an outpouring of viscid mucus into the bronchioles, which results in a serious loss of lung capacity and a corresponding lack of response to ordinary doses of epinephrine. It must be differentiated from intractable asthma which is a persistent refractory condition that fails to respond to all available therapeutic measures and is usually associated with bronchitis, bronchiectasis, and emphysema. Death occurs more frequently during status asthmaticus than during uncomplicated acute or intractable asthma.

The causes of status asthmaticus are usually overmedication, lack of sufficient fluids or food, and the administration of medicaments which depress the cough reflex or inhibit the production of secretions. Treatment of this condition must first be directed at reassuring the patient. Symptomatic therapy consists of measures aimed at keeping the air passages open and liquefying bronchial secretions. Intravenous epinephrine, 0.1 c.c. diluted in a small amount of isotonic saline, should be given a trial. Hospitalization in a dust-free room, oral and intravenous administration of fluids, sedation with chloral or barbiturates, and the administration of iodides by mouth or intravenously should be tried. Bronchial dilatation may be induced by the administration of aminophyllin, epinephrine, caffeine alkaloid, or caffeine sodium benzoate. Oxygen or mixtures of oxygen and helium should be employed when cyanosis is present. Morphine, dihydromorphinone, meperidine, and atropine should be avoided. Bronchoscopy is a dangerous procedure which rarely need be employed if proper care is given the patient. F.

Experiments in Induction of Allergy by Inhalation of Allergens. Arner, B.: Nord. med. **42**: 1257, 1949.

The author classifies positive cutaneous reactions to inhalants as manifest, latent, and semilatent on the basis of clinical reactions to exposure and induction tests. Using a Barach spray, inhalation tests were carried out with allergenic extracts, and asthmatic symptoms were induced in many allergic patients with positive cutaneous reactions to inhalants. Continuous observation of the variations in the relative oxygen saturation of the blood by the use of an oximeter demonstrated that the induced attacks were followed by hypoxia. A patient with positive cutaneous reactions of identical titers to horse dander and to ipecacuanha root extract developed asthma following the inhalation of the ipecacuanha root extract, but had no symptoms after a similar test with horse dander. This patient was, therefore, said to have a manifest allergy to ipecacuanha root and a latent allergy to horse dander. Cases are cited to illustrate each of the three classifications. H.

Asthma in Children: Salient Diagnostic Problems. Ratner, B.: J. A. M. A. **142**: 538, 1950.

Respiratory allergy, which is the commonest of all allergic manifestations, may begin in infancy. It may be ushered in by recurrent episodes of sneezing, lachrymation, rhinitis, and cough, or it may be preceded by eczema. The diagnosis of asthma should be made only on the basis of repeated attacks of dyspnea accompanied by sonorous and sibilant râles. Nasal smears and fluoroscopic examination are important aids in establishing the diagnosis. Skin testing, although of great significance, should not be attempted in the early stages of the disease before the skin has had time to become sensitized. Foods, inhalants, and contactants are of equal importance as etiologic factors in childhood. Multiple sensitivities are the rule rather than the exception and specific treatment is dependent on the multiplicity of causes. In the differential diagnosis consideration must be given to such diseases as whooping cough, cystic fibrosis of the pancreas, tuberculous tracheobronchial nodes, pneumonias, and the large variety of conditions which may simulate status asthmaticus. Treatment of status asthmaticus requires a circumspect and analytical approach rather than an heroic one. Small repeated doses of epinephrine 1:1000 (3 to 4 minims) should be given subcutaneously. Epinephrine by inhalation is dangerous because its absorption cannot be controlled. Morphine, atropine, the antihistaminics, and large doses of ephedrine are contraindicated. Bronchoscopy should be employed for the removal of thick tenacious bronchial secretions, foreign bodies, and papillomas. F.

Allergic Specificity of Pollens. Budd, E., and Freeman, J.: Lancet **257**: 1171, 1949.

In a London clinic, routine skin testing of patients clinically sensitive to grass pollens revealed that about 10 per cent of the patients also showed positive reactions to one or more of the Compositae pollens. After these cases had been treated with grass pollen extracts for several months, there was a diminution in the size of the skin reactions to grass and also to other pollens. Grass pollen therapy administered to a patient who was also egg sensitive diminished the skin reaction to pollen but failed to affect the egg reaction. It is suggested that grass-sensitive patients are sensitive to some protein or proteins common to these pollens. In cases of clinical sensitivity to both grass and Compositae pollens, treatment with grass pollen extract produced a diminution of the grass pollen reaction but not of the Compositae pollen reac-

tion. Apparently there was no spread in these cases, the sensitivities being separate and distinct. To explain the various sensitivity patterns of pollen-sensitive patients, the authors suggest that testing be done with the different protein fractions from a single grass pollen extract obtained either by electrophoresis or by actual division of the fluid extract according to molecular content. B. S.

Transitory Infiltrates in the Lungs With Eosinophilia (Loeffler's Syndrome). Woolf, V. F., and Gould, W. J.: Am. Rev. Tuberc. **59**: 679, 1949.

Loeffler's syndrome was noted in a 44-year-old woman who had had asthma for six years. She was known to be sensitive to a number of inhalants and also to white potato. The symptoms complained of were fatigue, dyspnea on effort, irritability, anorexia, and a 10-pound weight loss beginning in August, 1945. Lung infiltrations were found on two examinations in September. The chest was clear in December. Symptoms recurred for a short period in February, 1946, although the roentgenogram of the lungs was clear. She then remained free of symptoms other than asthma, but some lung infiltration was noted on her roentgenogram in October, 1946, and March, 1947. Cardiac enlargement appeared as part of the syndrome. The blood eosinophilia ranged from zero to 16 per cent. K.

A Census of Mould Spores in the Atmosphere. Hyde, H. A., and Williams, D. A.: Nature **164**: 668, 1949.

A 9-cm. Petri dish containing Sabouraud's agar was exposed for ten minutes each morning, six days a week, on a hospital roof in Cardiff, England, throughout 1948. The mold colonies were counted five and ten days after exposure. During the twelve months, 2,988 colonies in all were counted. They included the following: Cladosporium, 1,542; Penicillium, 380; Pullularia, 108; Phoma, 82; Botrytis, 69; Aspergillus, 34; Alternaria, 21; Oosporae, 20; Mucor, 12; Monilia, 11; Stemphylium, 7; Cephalosporium, 7; Rhizopus, 4; Trichothecium, 2; Nigrospora, 1; Papularia, 1; Verticillium, 1; sterilia (white), 440; sterilia (red and white), 167; unidentified, 79. There was a definite peak around mid-July and an equally pronounced drop around mid-January. Among individual types, Cladosporium was highest in summer, Penicillium in spring and autumn, Pullularia in May, Phoma in April, and Botrytis in autumn. I. GLAZER.

Other Factors Besides Allergy in Asthma. Rackemann, F. M.: J. A. M. A. **142**: 534, 1950.

Bronchial asthma is classified as extrinsic and intrinsic. The extrinsic type has its onset before the age of 30 years and is usually allergic, while the intrinsic type manifests itself after the age of 40 years and is seldom allergic. Patients with intrinsic asthma are believed to possess an inherited basic factor called the "asthmatic state" which predisposes them to attacks of asthma from a variety of causes such as allergy, infections, psychosomatic disturbances, "depletion," and intoxications.

Clinically, there is a great deal of evidence that stress or "depletion" can cause attacks of asthma. Selye's concept of the adaptation syndrome, including the alarm reaction, is similar to the concept of psychosomatic factors as a cause of the asthmatic attack. In intrinsic asthma, physical disturbances, such as focal infections, malnutrition, and poor general health, should be corrected. Nervousness, tension, and fear of the attack can be allayed by giving these patients confidence in their ability to control the asthmatic attacks. F.

Dermatology

Production of Bullae in Pemphigus with Hyaluronidase. Grais, M. L.: J. Invest. Dermat. **13**: 221, 1949.

Five patients with pemphigus were injected intracutaneously with 0.05 c.c. of solutions of hyaluronidase containing 30 turbidity reducing units and 5 TRU per c.c. In one subject who eventually succumbed from the disease, bullae were produced at the site of injection twelve days prior to death. Erythema developed quickly and within three days large blisters had formed. In other areas injected with saline or heat-inactivated hyaluronidase, no bullae were produced, although some redness and induration developed in the hyaluronidase-treated sites. R. WISEMAN.

Sulfonamide "Fixed Eruption." Meltzer, L.: J. Invest. Dermat. **13**: 213, 1949.

A 33-year-old male, who had been taking various sulfonamides periodically for six years, developed a pruritic erythematous circinate lesion over the interphalangeal joint of his thumb about twenty-four hours following the ingestion of 20 grains of sulfadiazine. After the lesion had completely cleared, the patient took 10 grains of sulfadiazine and 10 grains of sulfamerazine. Within a few hours the eruption reappeared in the same era. The question of a photosensitivity factor was ruled out by protecting the patient's thumb for twenty-four hours from ultraviolet light and administering sulfadiazine while the bandage was still in place. Within forty minutes, a reaction began under the bandage and the patient simultaneously developed a lesion on his penis as well as symptoms of urinary tract irritation. Blood was taken at this time for passive transfer studies. Following sensitization the oral administration of sulfa to the substitute failed to produce any reaction in the passively sensitized site. On a subsequent occasion, sulfamerazine was administered and the patient again developed the fixed eruption accompanied by symptoms of kidney and bladder irritation. Because of the increasing severity of the patient's reactions, further testing was not done. The author suggests that the patient's reactions were probably due to a sensitivity to para-amino N_2 pyrimidyl-benzene-sulfonamide or its derivatives. R. WISEMAN.

Cutaneous Lesions Occurring in the Course of Streptomycin Therapy. Cohen, A. C., and Glinsky, G. C.: Arch. Dermat. & Syph. **60**: 373, 1949.

Among 137 patients treated with streptomycin the most common skin lesion noted was a generalized pruritic maculopapular erythematous rash. The rash occurred after the first week of treatment, was self-limited, and did not necessitate the discontinuance of therapy. With lower dosages, the incidence of this type of lesion was diminished. Urticaria was encountered less frequently and usually occurred two weeks after the onset of streptomycin therapy. Treatment was not discontinued because of the urticaria which usually persisted until the drug was discontinued. Antihistaminic agents were of value in the control of both types of skin lesions. Exfoliative dermatitis, although rare, was the most serious type of cutaneous reaction encountered. It was accompanied by a high blood eosinophilia and in one instance exfoliation began two weeks after the onset of a maculopapular eruption or forty days following institution of streptomycin therapy. The development of this type of lesion is an indication for prompt withdrawal of streptomycin. Stomatitis and cheilitis were rarely encountered. Among 3 nurses who developed contact dermatitis from handling streptomycin, 2 experienced flare-ups of the lesions following patch tests. In

one nurse with pruritic lesions involving all exposed surfaces, there was definite exacerbation upon exposure to sunlight. The lesion cleared and exposure to sunlight produced no eruption when streptomycin contact was avoided. B. S.

Investigation of Contact-type Dermatitis Due to Compound Tincture of Benzoin. Steiner, K., and Leifer, W.: J. Invest. Dermat. **13**: 351, 1949.

Three cases of acute dermatitis resulting from the use of compound tincture of benzoin in combination with adhesive tape dressings were studied. Each patient gave a past history of having had ivy dermatitis and one had had a pruritic skin rash following the inhalation of compound tincture of benzoin. Patch tests were performed with adhesive plaster, compound tincture of benzoin, the tincture covered with adhesive, each of the ingredients of compound tincture of benzoin, benzoic acid, vanillin, and balsam of Peru. None of the patients reacted to adhesive tape, but all reacted to the tincture either alone or when covered with adhesive. It appeared that no single constituent of the compound tincture of benzoin was responsible for the dermatitis since all components produced a reaction in these individuals. A control group of ten patients with various skin diseases, mostly of allergic character, and another control group of twenty patients with nonallergic conditions and without skin diseases (''normals'') were patch tested with compound tincture of benzoin twice at an interval of two weeks. Among the controls, one patient with dermatitis venenata and another with dermatophytosis and dermatophytid showed positive reactions but only on the second testing. These reactions were not specific for any single component of the compound tincture. In view of the apparent induced sensitization in two patients, the authors advise against its use in patients with allergic diseases or a history of allergy. I. GLAZER.

Cigarette Paper Dermatitis. Tye, M. J.: J. Invest. Dermat. **14**: 77, 1950.

Two cases of contact dermatitis caused by cigarette paper are discussed. The characteristic location of the lesions on the opposing surfaces of the middle and index fingers was the clue which led to the correct clinical diagnosis. The paper being used by most cigarette manufacturers is obtained from a flowering plant of the flax family. In both patients, patch tests with the crude paper produced only mild erythematous responses, but similar tests with the refined product yielded significantly positive reactions. Patch tests with tobacco were consistently negative. R. WISEMAN.

Primary Irritants and Sensitizers Used in Fabrication of Footwear. Gaul, L., and Underwood, G.: Arch. Dermat. & Syph. **60**: 649, 1949.

One hundred sixty cases of dermatitis due to footwear were investigated. It was found that a great variety of primary irritants are used in the manufacture of shoes and that little attempt is made by producers to eliminate this hazard. Eruptions due to footwear tended to occur during warm weather or at times when there was a great deal of sweating. Ninety per cent of the subjects failed to give a positive personal or family history of allergy. Twenty-six patients amongst the group had had dermatitis venenata and 9 per cent had previously had dermatitis from contact with rubber products other than shoes. This incidence of previous attacks of dermatitis suggested a possible acquired susceptibility to contactants. It was found that the rash was frequently located in the region of the lining seams suggesting that there might be a volatile irritant in the adhesive substances used in some areas. Patch testing frequently revealed the offending contactant. However, a high per-

centage of reactions were obtained when the same materials were tested in normal individuals. The authors stress the need for educating the shoe industry in the avoidance of toxic materials in the manufacture of footwear.
R. WISEMAN.

Fungus Studies in Atopic Dermatitis. Perlman, H. H.: J. Pediat. **34**: 458, 1949.

Circumscribed, scaly skin lesions, resembling a superficial fungus infection, are occasionally observed in children with atopic dermatitis. Sixty-eight unselected and untreated children with atopic dermatitis were examined for possible fungus infection. Scrapings of the skin lesions were examined microscopically and were cultured. No pathogenic fungi were found among the entire series. Intracutaneous tests with extracts of Oidiomycin, Trichophytin, Aspergillus, Glaucus, Rhizopus, and *Penicillium notatum* gave negative reactions when read at fifteen minutes and at twenty-four hours. J. S.

Otorhinology and Ophthalmology

Studies in Mucous Membrane Sensitization. Part III. The Effects of Tooth-powder Containing Penicillin. Goldman, L., and Tronstein, A. J.: J. Invest. Dermat. **14**: 57, 1950.

Mucous membrane contact tests were performed with cotton pledgets bearing a tooth powder consisting of calcium phosphate, a wetting agent, flavor, and 500 units of penicillin G per gram. The control powder contained all of the ingredients except penicillin. The cotton pledget was allowed to remain in contact with the mucous membrane of the upper lip for one hour. Subjects who had had no previous contact with penicillin failed to show any reactions. Among individuals who had had previous contact with penicillin, only those who had previously manifested sensitivity to the drug, especially those with eczematous lesions, developed positive buccal mucosal contact tests. There was no evidence that mucous membrane testing could sensitize nonsensitive individuals. In another series of patients with known reactions to penicillin, scratch, intracutaneous, patch, and buccal mucosal tests were done. There was no definite correlation between mucous membrane tests and cutaneous tests. When penicillin tooth powder was used as an ordinary dentifrice twice daily by individuals with penicillin hypersensitivity, very few developed local reactions and none manifested systemic reactions. I. GLAZER.

Active Immunization Against Secondary Bacterial Infections of the Common Cold. I. Acquired Immunity in Mice Following Oral and Intra-abdominal Administration of Shock Polyvalent Bacterial Vaccines. Kolmer, J. A.: Arch. Otolaryng. **50**: 687, 1949.

Tablets of stock polyvalent vaccines prepared from the soluble products and the organisms commonly involved as secondary bacterial invaders in the common cold were administered orally and intra-abdominally to mice. These vaccines were found to have been absorbed from the gastrointestinal tracts of a large percentage of these normal adult mice as indicated by the acquisition of immunity or resistance against the virulent organisms employed. Active immunity was produced against hemolytic streptococci, types I, II and III pneumococci, *Klebsiella pneumoniae* (type A), and *Staphylococcus aureus*. The administration of placebo tablets to a control group of mice failed to produce immunity to the challenging organisms. C.

Active Immunization Against Secondary Bacterial Infections of the Common Cold. II. Production of Protective Antibodies in Human Adults by the Oral Administration of Shock Polyvalent Bacterial Vaccines. Kolmer, J. A., Bondi, A., Jr., and Schillinger, C.: Arch. Otolaryng. **50**: 693, 1949.

Enteric-coated tablets of stock polyvalent vaccines were prepared from the desiccated organisms and the soluble products of those bacteria generally regarded as the secondary bacterial invaders of the common cold. The tablets were administered orally to 116 adults. Thirty-five adults employed as controls received placebo tablets. Following the ingestion of the tablets, the sera of all subjects were studied by mouse protection tests for antibodies against hemolytic streptococci, type I pneumococci, and *Klebsiella pneumoniae*. Of the sera from the 116 patients receiving the bacterial vaccine tablets, 19.8 per cent showed the presence of protective antibodies against hemolytic streptococci, 25 per cent had protective antibodies against type I pneumococci, and 19.8 per cent had antibodies against *K. pneumoniae*. The sera were tested against two minimum lethal doses of the respective organisms. No protective antibodies could be demonstrated in the sera of the 35 subjects who received the placebo tablets. The serums of some adults were found to contain natural protective antibodies against the three challenging organisms. These natural antibodies, in addition to those produced by the vaccines, accounted for antibodies against hemolytic streptococci in 31 per cent, against type I pneumococci in 33.6 per cent, and against *K. pneumoniae* in 36.2 per cent of the 116 adults.

It was concluded the oral administration of tablets prepared of desiccated organisms and their soluble products may result in the production of protective antibodies against hemolytic streptococci, type I. pneumococci, and *K. pneumoniae* in a significant number of adults. C.

Treatment of Allergic and Vasomotor Rhinitis With Hesperidin Chalcone Sodium. Saylor, B. W.: Arch. Otolaryng. **50**: 813, 1949.

Vitamin P acts as an inhibitor of an oxidizing enzyme, amine oxidase, and thus prevents the oxidation of epinephrine. The favorable results obtained with vitamin P in the treatment of vasomotor and allergic rhinitis, therefore, may be explained by the fact that the destruction of epinephrine, which is a histamine antagonist, is prevented.

Hesperidin chalcone sodium, a vitamin P preparation, was administered orally to 99 patients with allergic rhinitis and vasomotor rhinitis. Thirty-five per cent of the patients obtained complete relief of symptoms, 34 per cent obtained partial relief, and 25 per cent experienced no relief. Side reactions such as urticaria, nausea, and exacerbation of asthma occurred in 5 per cent of the patients. The dose required was 100 to 600 mg. daily and the effect lasted for from four to six hours. C.

Allergy as a Cause of Nuchal Myalgia and Associated Headache. Randolph, T. G.: Arch. Otolaryng. **50**: 745, 1949.

Localized muscular reactions manifested by aching, tautness, and decreased mobility of the posterior cervical muscles are commonly observed in the allergic patient. The fact that such symptoms may be induced experimentally or relieved by avoidance of specific allergenic foods indicates that they may be allergic in origin. Inhalants, such as house dust, have also been incriminated as causative agents. The syndrome may be reproduced in some dust-sensitive patients either by exposing them to house dust or by administering an overdose of house dust extract. Chronic myalgia of the posterior

cervical region is one of the commonest localized allergic manifestations involving muscle groups. It may be associated with headache, chronic fatigue, and other allergic manifestations. C.

Miscellaneous Allergies

Nature of the Plasma Factor Responsible for in Vitro Lysis of Leucocytes by Tuberculoprotein. Miller, J. M., Favour, C. B., Wilson, B. A., and Umbarter, M. A.: Proc. Soc. Exper. Biol. & Med. **71**: 287, 1949.

Washed white blood cells from normal tuberculin-negative humans underwent significant cytolysis when suspended for one hour at 37° C. in a mixture of plasma from tuberculous patients and tuberculin. The factor in the tuberculous plasma responsible for this lysis could be destroyed by heating the plasma for fifteen minutes at 56° C., but was stable for at least seven days at 10° C. It was not dialyzable and was precipitated with the globulin fraction of the plasma proteins. I. GLAZER.

The Role of Complement in the Lysis of Leucocytes by Tuberculoprotein. Miller, J. M., Vaughan, J. H., and Favour, C. B.: Proc. Soc. Exper. Biol. & Med. **71**: 592, 1949.

White blood cells from a healthy tuberculin-negative subject underwent partial cytolysis when incubated for one hour at 37° C. with fresh plasma from a tuberculous patient and tuberculin. No such cytolysis occurred when plasma of a tuberculin-negative subject was used or when complement was removed from the tuberculous plasma by means of an unrelated complement-fixing antigen-antibody system. The cytolytic action was restored by the addition of fresh plasma from a normal tuberculin-negative individual to the "decomplemented" tuberculous plasma. I. GLAZER.

Hypersensitivity to Folic Acid. Mitchell, D. C., and Vilter, R. W.: Ann. Int. Med. **31**: 1102, 1949.

A 35-year-old woman was admitted to the hospital with granulocytopenia apparently due to thiouracil, which she had received intermittently during the past four years for thyrotoxicosis. She gave a history of recurrent generalized maculopapular eruptions which had been attributed to various foods, contactants, and phenobarbital. Dyspnea and a pruritic rash were reported following the administration of Nembutal and aspirin. Leukopenia had occurred once before with thiouracil therapy. When folic acid was administered orally at that time, she developed a maculopapular erythematous, pruritic rash which cleared rapidly when the folic acid was discontinued. Two weeks prior to the present admission, thiouracil therapy had been reinstituted. Eleven days later, she developed a sore throat and an itching rash over her arms and shoulders. The rash began to clear when the thiouracil was discontinued, but her throat became worse and she was hospitalized. On admission, her temperature was 104° F. and the white blood count was 2000 with 96 per cent lymphocytes and 4 per cent monocytes. The bone marrow showed 9 per cent myeloblasts, but no mature granulocytes. Penicillin therapy and supportive measures failed to alleviate the throat infection and the granulocytopenia. As a trial, 50 mg. of synthetic folic acid was given intravenously with no visible reaction. The next day, a similar injection was given. She immediately became dyspneic, cyanotic, orthopneic, complained of severe substernal oppression, and developed tachycardia. The entire reaction subsided within ten minutes. The throat infection and agranulocytosis cleared after two weeks.

Intracutaneous tests performed with folic acid solutions yielded immediate wheal reactions on two different occasions. Precipitins to folic acid could not be demonstrated in the patient's serum. B. S.

Inhibition of the Tuberculin Type Reaction by Antihistaminic Drugs and Rutin. Criep, L. H., Levine, M. I., and Aaron, T. H.: Am. Rev. Tuberc. **59**: 701, 1949.

Pyribenzamine in doses of 400 mg. was administered daily to twenty-nine patients with known cutaneous responses to 1:10,000 O.T. They were retested after the ingestion of 600 mg. of the drug and the reaction was read after a total of 1400 mg. had been taken. There was no diminution in response, and the cutaneous reaction appeared to be greater in fifteen subjects. Similarly, the reaction to tuberculin patch tests applied directly over areas infiltrated with Pyribenzamine was not inhibited.

The simultaneous injection of P.P.D. and antihistaminics (pyribenzamine, Thephorin, Neohetramine) as a mixture resulted in a lesser response in twelve of thirteen tests as compared with control injections in the same subjects. No definite inhibitory effect was noted when histoplasmin was injected with Pyribenzamine. The oral administration of rutin failed to influence the tuberculin reaction in humans. Guinea pigs infected with tubercle bacilli and treated with Pyribenzamine appeared to develop skin sensitivity slightly later than controls. K.

Idiopathic (Schoenlein) Purpura Associated With Hematuria. Lazarus, J. A.: J. Urol. **62**: 354, 1949.

Within a four-year period, an 18-year-old boy had four episodes of hematuria associated with pain in the lower back, groin, and thigh. Subconjunctival hemorrhages and arthralgia affecting several joints accompanied the above symptoms. These attacks lasted about fourteen days and occurred at intervals of from six to twelve months. In the absence of a primary lesion of the urogenital tract or of alterations in the hemopoietic system or blood-clotting mechanism, a diagnosis of Schoenlein's purpura and hematuria was made. Allergic investigation revealed sensitivities to rice, wheat, chocolate, nuts, and to some vegetables and fruits. Elimination of these foods resulted in a prompt and complete abatement of all symptoms. H.

Sensitivity to Sesame Seed and Sesame Oil. Rubenstein, L.: New York State J. Med. **50**: 343, 1950.

A 31-year-old man developed a feeling of tightness in the throat, nausea, vomiting, weakness, and a generalized intense erythema, thirty minutes after eating Halvah. Despite warnings not to eat foods containing sesame seed or sesame oil, the patient had several similar attacks and, on one occasion, went into shock. The foods responsible for these episodes were Honee-Seed candy, Italian-French bread with sesame seeds, coffee ring, and Danish pastry. An intracutaneous test with an extract of sesame seed yielded a marked positive reaction. B. S.

Sensitization to Para-aminosalicylic Acid. Sonck, C. E.: Acta allergologica **2**: 192, 1949.

Hypersensitivity to para-aminosalicylic acid (PAS) was encountered in a 43-year-old woman with lupus erythematosus who took from 6 to 8 Gm. of the drug orally daily for nineteen days. The nineteenth dose was followed by chills, fever, nausea, and violent pains in the back and legs. Within thirty minutes she developed angioedema of the face, difficulty in breathing, and an

"asthmatic cough" with foamy sputum. About two hours later, a generalized erythematous eruption was noted. The patient had never manifested any intolerance for aspirin. A test dose of 0.5 Gm. of PAS was given orally twelve days later. Within ten minutes, the reaction described above occurred again and it became necessary to administer epinephrine in order to control the symptoms. H.

Provocative Diets in the Recognition of Food Allergy. Lee, H. J., and Squier, T. L.: J. A. M. A. **142**: 318, 1950.

Allergic reactions to foods are most commonly seen in children, but are often encountered among adults. Small amounts of food protein are incapable of producing symptoms since a definite threshold of antigen absorption must be attained before clinical reactions are provoked. With the exception of such potent allergens as fish, nuts, and seeds, the small amounts of specific food allergens present in prepared foods are usually insufficient to cause symptoms and need not be eliminated from the diet of specifically sensitive patients.

In adults, it is important to learn whether there was any food intolerance during childhood, since excessive ingestion of this food may re-establish specific intolerance. Although skin testing is of value in detecting offenders, sensitivity to split or altered fractions of food may exist without producing skin sensitivity. The diagnosis of food allergy is often facilitated by the use of provocative diets which consist of feeding the patient wheat, milk, egg, beef, orange, and potato exclusively for about one week. If no exacerbation of symptoms occurs, it may be assumed that these foods are not of etiologic importance. Provocative diets provide a method for determining the existence of food sensitivity without subjecting the patient to the depletion which often results from ill-advised and long-continued elimination diets. F.

Anaphylactoid Shock Due to Penicillin: Report of a Case. Burleson, R. J.: J. A. M. A. **142**: 562, 1950.

A 40-year-old male patient who had previously received penicillin therapy went into shock, his blood pressure having dropped to 50/20 within fifteen minutes following an intramuscular injection of 200,000 units of crystalline sodium penicillin G dissolved in isotonic sodium chloride solution with 0.5 c.c. of 1 per cent procaine. Typical asthmatic wheezing was heard over the chest, the eyelids were swollen, the tongue was thick, and there was a generalized flushing of the skin. He did not develop urticaria or a rash. Treatment consisted solely of the intravenous administration of between 3 and 4 c.c. of diphenhydramine. Improvement of all symptoms occurred within ten minutes with the exception of the blood pressure, which remained at the same low level. Forty-five minutes later, he again became apprehensive and complained of feeling hot and weak but no further medication was required and gradual improvement ensued. Forty-eight hours after this episode, intracutaneous tests were performed with normal saline, penicillin in saline, 1 per cent procaine, and a procaine-penicillin mixture. Immediate wheal reactions as well as delayed reactions, persisting for two weeks, were observed at the penicillin test sites. The delayed reactions consisted of maculopapular lesions with scabbed centers. Control tests were negative. F.

Anaphylaxis

The Antigenicity of Collagen. Waksman, B. H., and Mason, H. L.: J. Immunol. **63**: 427, 1949.

Rabbits were given repeated intravenous, intraperitoneal, or intramuscular injections of one of the following substances: rabbit collagen, commercial

gelatin, or human serum globulin, or these substances coupled with diazotized sulfanilic acid; human collagen alone, or mixed or coupled with human serum globulin, with or without Freund's adjuvants. Nineteen patients affected with discoid lupus erythematosus, disseminated lupus erythematosus, rheumatoid arthritis, acute rheumatic fever, dermatomyositis, or scleroderma were studied. At no time did any of the rabbits' or patients' sera show complement fixing or precipitating antibodies for collagen or gelatin. Rabbits receiving collagen alone or collagen coupled to globulin did not show antibodies to globulin, while those which received globulin alone or globulin mixed with collagen produced antibodies to globulin in high titer. Guinea pigs were injected intraperitoneally with the various human antigens and three weeks later the homologous antigen was given intravenously. Only those guinea pigs which had received unaltered globulin showed anaphylaxis. Examination of sections of the heart, liver, kidney, spleen, and tendon from animals receiving human collagen revealed no consistent characteristic pathologic alterations. The authors question the possible influence of the methods of purification of the collagen upon the failure to demonstrate antigenicity of this substance. I. GLAZER.

Chromatographic Demonstration of Histamine Release in Anaphylactic and Trypsin Shock. Urbach, K. F.: Proc. Soc. Exper. Biol. & Med. **72**: 626, 1949.

Butanol extracts were made of the plasma of blood removed before and after the production of anaphylactic or trypsin shock in dogs. These samples were concentrated with ammonium sulfate, exposed to filter paper strips, and compared by chromatographic methods to strips treated with known amounts of histamine. The results indicated that significant amounts of histamine were released in both types of shock and this finding was confirmed by biological assay. The author is of the opinion that chromatography is a reliable technique for determining blood histamine levels. R. WISEMAN.

Pharmacology, Physiology, and Pathology

Plasma Volume and Extravascular Thiocyanate Space in Experimental Serum Sickness in Rabbits. (Abst.) Harrell, G. T., and Yount, E. H.: Am. J. Med. **7**: 247, 1949.

Patients with Rocky Mountain spotted fever frequently manifest edema during the acute phase of the disease. The plasma volume is reduced transiently and peripheral circulatory failure may ensue. The maximum changes usually occur just before the temperature begins to fall. These time relationships suggest the possibility that an antigen-antibody reaction may account for the alteration in capillary permeability. In order to prove or disprove this hypothesis, rabbits were injected intravenously with human plasma (5 c.c. per kg. of body weight). The plasma volume and the thiocyanate space was simultaneously determined. Three base line determinations were made before injection; three additional determinations were made on successive days, beginning with the appearance of precipitins for human plasma in the rabbit's blood, usually on the seventh or eighth day after injection. A final determination was done one week later. A significant rise in the thiocyanate space was observed. This rise was accompanied by clinical manifestations of serum sickness, namely, edema, fever, and listlessness. The drop in the plasma volume was small but was statistically significant for the group. The changes reverted to normal during convalescence. Similar results were obtained in another series of animals injected with purified human serum albumin. F.

Acute Polyarteritis Nodosa in Childhood. Taylor, A. W., and Jacoby, N. M.: Lancet **257**: 792, 1949.

A 7-year-old girl received sulfonamides for approximately five days for a sore throat and fever. Two weeks later, she was admitted to the hospital because of vomiting and marked edema of the face. There was a marked suppression of urinary output and a catheterized specimen showed red blood cells, pus cells, and granular casts. A blood study showed 32,000 white cells and a normal platelet count. The bleeding time was 12 minutes. The face showed a butterfly area which was almost black. On the sixth hospital day, the blood urea was 376 mg. per 100 ml. The child became comatose, had two convulsions, and died. Macroscopically, at autopsy, the spleen was enlarged and showed several infarcts, the kidneys were swollen and hemorrhagic, and there was an extradural hemorrhage. The adrenal glands were not involved. Histologically, there was an acute extensive inflammation involving arteries and arterioles with complete necrosis of the affected segments of the vessels, resulting in hemorrhage into surrounding tissues. The lesions were so widespread in the kidneys that the effect was one of almost complete infarction of both kidneys. The entire picture was that of acute polyarteritis nodosa. The relationship between this condition, purpura fulminans, postscarlatinal purpura and gangrene, and purpura necrotica is discussed and a common etiology is postulated. B. S.

Polyarteritis Nodosa of the Coronary Arteries. Sinclair, W., and Nitsch, E.: Am. Heart J. **38**: 898, 1949.

Polyarteritis nodosa was observed in a 9-month-old infant who developed an acute suppurative cervical adenitis. There was no history of allergy. Sulfonamides had never been administered. On the day after an initial dose of penicillin and sulfadiazine, she developed conjunctivitis and a macular rash on the abdomen which spread and lasted about five days. Fever persisted and both penicillin and sulfadiazine were continued. On the twelfth hospital day, the fever dropped. Sulfadiazine was discontinued on the eighteenth day. On the twenty-second day, laryngoscopy was performed for stridor which had been present before her hospitalization. She died during the procedure. An autopsy disclosed acute and organizing polyarteritis nodosa, limited to the coronary arteries, with rupture of one of multiple coronary artery aneurysms, and intrapericardial hemorrhage. The infant also was found to have "slight focal acute and chronic exudative myocarditis, focal organizing acute epicarditis, slight focal acute interstitial pneumonitis, slight acute bronchitis, and eosinophilic infiltration of the pulp of the spleen." K.

The Clinical Application of a New Piperazine Compound. I. Human Pharmacology. Jaros, S. H., Castillo, J. C., and De Beer, E. J.: Ann. Allergy 7: 458, 1949.

The inhibiting action of 'Perazil' brand Chlorcyclizene Hydrochloride (N-methyl-N'-[4-chlorobenzhydryl] piperazine dihydrochloride) on histamine wheals was studied in thirty subjects. Sixteen in the group were allergic and fourteen were nonallergic. Scratch tests were made with histamine in dilutions varying from 1:4,000 to 1:512,000 at intervals of from two to thirty-two hours after the oral administration of 'Perazil.' The antihistaminic properties of this drug were compared with those of Pyribenzamine in the same patients. It was found that the histamine inhibition effects of 'Perazil' were greater and of longer duration than those of Pyribenzamine. Side effects,

principally drowsiness, were noted less frequently from 'Perazil' than from Pyribenzamine. In three patients who received 400 mg. of 'Perazil,' observations over a three-hour period failed to indicate any effects on the circulation. W.

Vascular Diseases Due to Hypersensitivity: So-Called Diffuse Collagen Disease. Kampmeier, R. H.: Am. Pract. **1**: 113, 1950.

The so-called diffuse collagen diseases include disseminated lupus, periarteritis nodosum, dermatomyositis, scleroderma, and rheumatoid arthritis, and possibly rheumatic fever, glomerulonephritis, and malignant hypertension. Fundamentally, the pathology involves tissues derived from mesoderm, i.e., connective tissue. Swelling, increased density, and fibroid changes occur in the collagen and there is polymorphonuclear and round cell infiltration. Occasionally, eosinophiles are present. These connective tissue changes occur in the media, adventitia, and perivascular tissue and produce the common vascular lesions referred to as necrotizing arteritis. There is much pathologic and clinical evidence to support the theory that these diseases are an expression of hypersensitivity of the connective tissue. Periarteritis nodosa may be regarded as an explosive, high-grade anaphylactic response, whereas rheumatoid arthritis and scleroderma appear to be low-grade chronic allergic reactions. Discovery of the pathogenesis of these diseases may lead to the control of such disabling common diseases as rheumatoid arthritis, rheumatic fever, and perhaps acute glomerulonephritis. F.

Inhibitory Effect of Nitrogen Mustard (Bis-Beta-Chloroethyl Amine) on Lesions of Experimental Serum Hypersensitiveness. Bukantz, S. C., Dammin, G. J., Wilson, K. S., Johnson, M. C., and Alexander, H. L.: Proc. Soc. Exper. Biol. & Med. **72**: 21, 1949.

In two separate but similar experiments, rabbits were given several intravenous injections of nitrogen mustard prior to and following a single massive intravenous dose of horse serum. The control animals received only the single intravenous injection of horse serum. Leucocyte counts were done before the administration of mustards, after the fifth injection (one week after the serum had been given), and upon completion of the experiment. Skin tests were performed with various dilutions of horse serum and the reactions were graded according to the presence of hemorrhage, edema, and erythema. A significant leucopenia (both granulocytic and lymmphocytic) developed in all the treated rabbits. Antibody titers of the treated animals as determined by the nitrogen content per ml. of undiluted serum showed a definite delay in the appearance of the antibodies and a greatly diminished total quantity of antibodies in the subsequent titrations. In general, vascular reactions in nitrogen mustard-treated groups were less intense than in the controls and seemed to parallel the lowered antibody levels in the treated group. Skin reactivity, as manifested by Arthus type reactions, could not be correlated with the antibody levels. The critical level determining the presence or absence of vascular lesions was approximately 0.06 mg. antibody N/ml. The authors believe that these findings are highly suggestive, but by no means conclusive, that antibodies play an important role in the pathogenesis of experimental vascular lesions. R. WISEMAN.

Effect of Adrenergic Blocking Agents on the Cutaneous Action of Epinephrine. Last, J. H., Rodriguez, A., and Pitesky, I.: Proc. Soc. Exper. Biol. & Med. **72**: 114, 1949.

With an electrophoretic technique, dibenamine, SY-28, and solvent controls were applied at the positive pole to the skin of rabbits for 5 minutes. The

areas were cleansed with propylene glycol and 0.1 c.c. of epinephrine in various dilutions was injected intracutaneously into the treated sites. Vasoconstriction reached a maximum only after 30 minutes. Both dibenamine and SY-28 were capable of blocking the vasoconstriction of epinephrine. By electrophoretic application SY-28 was approximately five times as potent as dibenamine and by intravenous injection it was eight times as effective. Apparently both blocking compounds were fixed locally in the skin, since contiguous untreated areas were still capable of responding to epinephrine. R. WISEMAN.

Liberation of Heparin and Histamine by d-Tubocurarine. Reid, G.: Nature **165**: 320, 1950.

In perfused isolated lungs of guinea pigs, tubocurarine chloride, in doses of from 1 to 10 mg., liberated histamine. The output of histamine resembled, in magnitude and time, that caused by the injury produced by peptone or anaphylaxis. Intravenous injection of tubocurarine in dogs caused a fall in arterial, venous, and portal pressures. When tubocurarine (0.25 to 15 mg.) was injected into the portal vein of the dog under chloralase, there was a sharp rise of portal pressure with a fall in systemic arterial and venous pressures. The rise of the portal pressure was due to the liberation of histamine as shown by the antagonism of Benadryl to small doses of tubercurarine given intraportally and by detectable loss of liver histamine with larger doses. The portal pressure rise was similar to that caused by intraportal injection of histamine. No histamine was liberated when the isolated liver was perfused with Tyrode solution or heparinized blood containing tubocurarine. An intraportal injection of tubocurarine markedly prolonged the clotting time of the arterial blood which could then be promptly clotted by addition of thrombin or protamine. This was suggestive of a liberation of heparin such as occurs in anaphylactic and peptone injury. I. GLAZER.

Effect of Pilocarpine on Epinephrine Reversal Produced by 2-(N-p'toly-N-[m'hydroxyphenyl]-aminomethyl)-Imidazoline. HCl (C-7337). Morrison, J. L., Langston, R. J., and Richardson, A. P.: Proc. Soc. Exper. Biol & Med. **72**: 622, 1949.

In unanesthetized heparinized dogs, an intravenous injection of epinephrine caused a rise of the arterial blood pressure. The same dose of epinephrine, given after an intravenous injection of 4 mg. per kg. of the adrenolytic compound C-7337, produced a fall in the blood pressure. This epinephrine reversal was abolished by the sympathomimetic agents, pilocarpine, physostigmine, and choline, and could be reinstated by the injection of atropine. Dibenamine-epinephrine reversal was also blocked by pilocarpine. Pilocarpine was effective in decreasing the depressor action of isopropyl norepinephrine and of acetylcholine. I. GLAZER.

The Effects of Intravenously Administered Aminophylline on Cerebral Circulation and Metabolism in Man. Wechsler, R. L., Kleiss, L. M., and Kety, S. S.: J. Clin. Investigation **29**: 28, 1950.

Aminophylline, 0.5 Gm. in 250 c.c. physiologic saline, was administered intravenously over a twenty-minute period to each of ten hospitalized patients. Cerebral blood flow, measured by the nitrous oxide method, was found to be definitely reduced. The decrease in cerebral blood flow was attributed to increased cerebrovascular resistance. The carbon dioxide content, pH, and carbon dioxide tension of blood from the internal jugular vein remained constant. The internal jugular venous blood oxygen content decreased from 8.2 to 6.2 volumes per cent. The possible mechanisms of the cerebral anoxia are discussed. Anxiety, dizziness, sweating, nausea, and hypotension appeared in four patients

who showed increased cerebral oxygen consumption (indicating slower circulation of blood through the brain). These symptoms did not appear in six patients in whom cerebral oxygen consumption decreased. K.

Leucocyte Picture of the Rat: Relation of Adrenal and Spleen. Drury, A.: Am. J. Physiol. **160**: 75, 1950.

In rats, the spleen influences the effect of the adrenal cortex on the blood leucocyte picture. Splenectomy prevents the typical depression of the lymphocytes and the increase in the neutrophiles which ordinarily follow the injection of adrenalin. The influence of the spleen upon the blood picture is not associated with any variation in the ascorbic acid content of either the spleen or the adrenals. The polymorphonuclear leucocytosis which follows splenectomy and adrenalectomy is not mediated by the same mechanism as that mediating the leucocytosis which results from the injection of adrenalin. The latter is accompanied by a change in the ascorbic acid content of the adrenals but not in that of the spleen. The depression in eosinophiles which occurs after adrenal cortical stimulation is unaffected by splenectomy. Eosinophilia could be induced by the injection of adrenalin in adrenalectomized rats, but not in adrenalectomized-splenectomized animals. Of the white blood cells studied, the eosinophiles seemed to be the cell most influenced by adrenal cortical activity. F.

Effect of Tripelennamine Hydrochloride in Burn Shock. Gunnar, R. M., and Weeks, R. E.: Arch. Path. **47**: 594, 1949.

Large doses of tripelennamine hydrochloride (Pyribenzamine) failed to protect rabbits against shock resulting from burns. The treated animals showed decreased viability as compared to the controls. These findings suggest that histamine is not the "burn toxin" which causes shock after severe burns. Not only did the drug fail to prevent shock, but it seemed to act as an additional toxic factor in the burned animals. J. S.

The Effect of Antihistamine Medication on the Tuberculin Reaction in Children. Friedman, E., and Silverman, I.: Am. Rev. Tuberc. **60**: 354, 1949.

Pyribenzamine in doses as high as 240 mg. daily was administered to children with positive cutaneous reactions to old tuberculin. The drug was given for two days prior and two days following the repeat testing. The drug had no discernible effect on cutaneous reactivity to tuberculin. K.

The Bronchodilator Activity of Some Analogues of N-Isopropylarterenol (Isuprel). Siegmund, O. H., Beglin, N., and Lands, A. M.: J. Pharmacol. & Exper. Therap. **97**: 14, 1949.

Isuprel, or one of its analogues, mixed with a histamine solution was nebulized into a chamber into which a guinea pig had been placed. Isuprel was the most potent bronchodilator of eight drugs tested. The relation of the chemical configuration of these drugs to their pharmacologic activity is discussed. K.

Miscellaneous

Effect of Diphenhydramine Hydrochloride (Benadryl) on Herxheimer Reaction After Use of Penicillin. Stewart, J. J.: Arch. Dermat. & Syph. **60**: 427, 1949.

Within the first twelve hours following the initial injection of 300,000 units of penicillin in oil and wax, 31.1 per cent of a series of patients with untreated primary and secondary syphilis developed Herxheimer reactions, as

evidenced by a febrile reaction. The incidence of these reactions was not diminished by the oral administration of 100 mg. of Benadryl with the penicillin injection and four 50 mg. doses every four hours thereafter. B. S.

Nonconvulsive Biochemotherapy With Histamine. Sackler, A. M., Sackler, M. D., and Sackler, R. R.: J. Nerv. & Ment. Dis. **110**: 149, 1949.

Nonconvulsive therapy with histamine seemed to be as effective as electric shock treatment in patients with schizophrenia, manic-depressive, and involutional psychoses. One to 3 mg. of histamine base in saline was given intravenously, subcutaneously, and intramuscularly once or twice daily to thirty-eight hospitalized patients. Each patient received a total of from eleven to seventy doses. Twenty-six per cent of the cases showed some improvement and one-half of these reached the convalescent stage. H.

The Zone of Localization of Antibodies. IV. The in Vivo Disposition of Anti-Mouse-Kidney Serum and Anti-Mouse-Plasma Serum as Determined by Radioactive Tracers. Pressman, D.: J. Immunol. **63**: 375, 1949.

Antiovalbumin serum and anti-mouse-plasma serum were prepared by injecting rabbits with the specific antigen combined with Freund's adjuvant. Anti-mouse-kidney serum was produced by injecting rabbits with a homogeneous saline suspension of blood-free mouse-kidney tissue. Mice were injected intravenously with radioiodinated globulin fractions of the antisera, and then sacrificed at the appropriate time. In mice the distribution of the radioiodinated globulin fractions of anti-mouse-plasma and antiovalbumin sera during the first few days was found to be very similar to that of native antibodies in actively or passively immunized rabbits. Radioactivity was localized in the kidneys of the animals receiving the antikidney serum but not in the kidneys of those receiving antiplasma or antiovalbumin serum. Radiodide showed no such localization. This finding in mice was not strain specific. Localization of radioactivity in the kidneys of the animals receiving antikidney serum is attributed to antibody molecules in the antikidney serum. The authors believe that the prolongation of radioactivity in kidney and liver tissue is caused by the inability of these organs to metabolize the antibody. R. WISEMAN.

Pulmonary Embolism Following Injection of Penicillin in Oil and Wax. Axelrod, M.: J. A. M. A. **142**: 802, 1950.

A 57-year-old man developed signs of pulmonary embolism shortly following the injection of penicillin in oil and wax. He showed a blood eosinophilia of 67 per cent. On physical examination bilateral basilar rhonchi were heard. X-ray examination showed diffuse patchy densities in both lower lobes. This type of reaction resembles Loeffler's syndrome in many respects and must be differentitaed from it. F.

Thrombotic Thrombopenic Purpura Caused by Iodine. Ehrich, W. E., and Seifter, J.: Arch. Path. **47**: 446, 1949.

Fatal thrombotic thrombopenic purpura occurred in a 24-year-old colored woman. The patient had taken Kelpidine, a commercial reducing agent containing kelp and iodine, for three weeks prior to the onset of her illness. She had also taken it a year earlier. On autopsy, considerable amounts of iodine were found in vital organs. It has been shown that thrombocytes become laden with iodine when exposed to the drug. It is suggested that, in this case, antibodies evoked by the iodine caused agglutination or distintegration of the iodine-laden thrombocytes in the circulating blood, occluding many capillaries. As a result, the blood became depleted of thrombocytes and thrombopenic purpura ensued. J. S.